白色來航第一產卵年卵之增重研究

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一、引 言

本研究之目的，在分析產卵鷄第一產卵年卵重之遞增情形，以爲根據卵重選擇鷄隻之根據，求能在短期內觀察其生產情形，先行淘汰不合要求者，以符合飼養經濟之原則。關於鷄群全年產卵量之擇選，多產者固屬重要，但其全年卵之平均重量亦不可忽視，卵之平均重量，能達市場之標準，則經營者亦可增加收益。

據 Jull (1924)報告：產卵鷄在一年之中，卵重均有變異，卵各部份之變化，由於生理發生變化所引起。 Atwoop (1925)稱：鷄隻卵重隨其歲數增加而逐漸遞減。 Waters (1937)報告稱：產卵鷄第一產卵年卵重之變異，在第十一個月至第十八月之間爲最少。該氏(1941)又稱：卵重遺傳與親代母系關係較大，母系卵大者則其女卵亦大，與親代父系關係則較少，有如性之連鎖遺傳然。但據Hays (1941)稱：卵之大小，父母之遺傳能力兩者相等而同樣重要。總之，卵之大小與遺傳有關則毫無疑問，但卵重除遺傳關係外，亦受生理、飼養管理及環境等因子之影響。玆將來航產卵鷄在同一飼養管理環境之下，研究分析其第一產卵年卵重增加之結果，分述如後，以供參考。

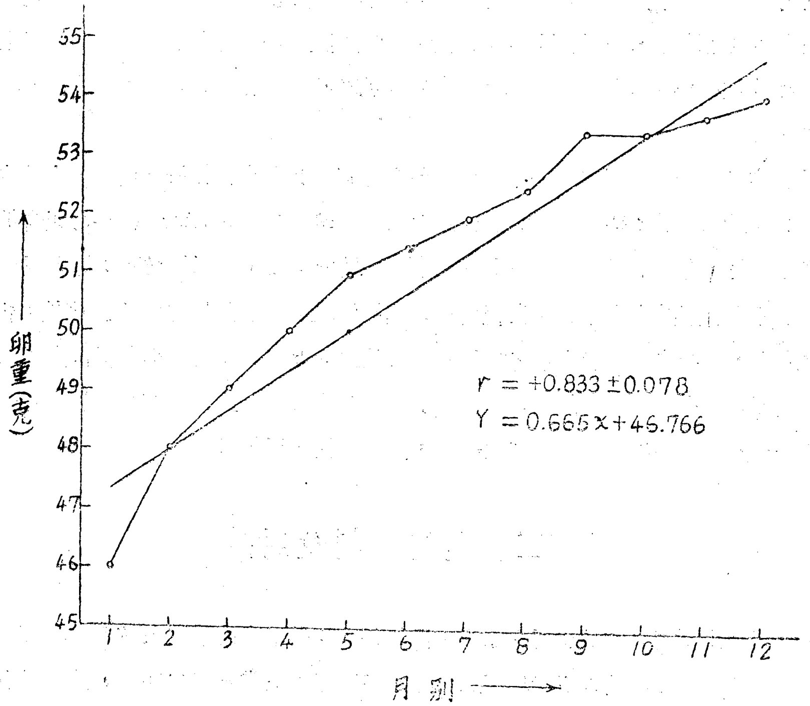
二、研究資料及討論

本研究資料爲臺灣省農業試驗所養鷄場，自1945—1950年白色單冠來航第一產卵年之產卵記錄。其第一產卵年之卵數在 100 枚以下者均不加計算。每天卵重係當日下午稱之，稱重至小數點一位。統計資料計來航 163 隻，其卵數共計 26,452 枚，其第一產卵年每隻產卵平均爲162.227± 2.687枚，其開始產卵最早128天，最遲 337 天，平均天數爲192.583±3.323天。逐月卵之平均增重情形如表(一)，其增重之速度則以指數（即以第一個月卵重平均爲100）示之。其遞增之趨向則如圖(一)，卵之增重與開始產卵後年齡(月數)之相關係數爲$r=+0.833\pm0.078$，此即表示第一產卵年卵之增重與年齡成正比例，據 Waters(1937) 稱：測最大卵重則約在成熟期年齡之第十個月，以後其增減則不顯著。在圖(一)之曲線亦可看出增重之速度亦隨年齡(月數)之增加而漸緩。

表(一) 163白色來航第一產卵年逐月卵之平均增重(克)

月別 / 平均及指數	第一月	第二月	第三月	第四月	第五月	第六月
卵重平均	46.075±0.387	48.117±0.353	49.172±0.35	50.071±0.448	50.926±0.373	51.443±0.310
指數	100	104.431	106.721	108.672	110.523	111.650
月別 / 平均及指數	**第七月**	**第八月**	**第九月**	**第十月**	**第十一月**	**第十二月**
卵重平均	51.914±0.360	52.447±0.309	53.556±0.286	53.435±0.348	53.735±0.356	54.058±0.342
指數	112.803	113.829	116.019	115.973	116.625	117.326

圖(一)：163隻來航第一產卵年逐月平均卵重圖



第一個月產卵平均重量(小數點以四去五入法計算之)之範圍爲33－59克，其平均爲46.075±0.387克，依其第一個月不同之平均卵重分別列表分析其增重情形如表(二)，同時亦以其增重指數分別製圖(二)，以示第一個月各種不同之平均卵重逐月增重之速度，除第一個月平均卵重33, 36, 55, 58, 及59克因變員數(隻數)太少，未予製圖外，其餘各種卵重之增加指數直線方程計算如下：

第一月平均卵重	直線方程式	第一月平均卵重	直線方程式	第一月平均卵重	直線方程式
37(克)：	Y=2.446x+111.184	44(克)：	Y=1.786x+104.641	51(克)：	Y=1.074x+ 99.092
38(〃)：	Y=1.637x+115.193	45(〃)：	Y=1.510x+ 99.601	52(〃)：	Y=0.774x+ 99.469
39(〃)：	Y=2.543x+105.637	46(〃)：	Y=1.592x+ 99.402	53(〃)：	Y=0.024x+101.437
40(〃)：	Y=2.405x+102.867	47(〃)：	Y=0.432x+104.442	54(〃)：	Y=0.387x+ 97.318

41(〃)： Y=2.729x+103.762　48(〃)： Y=0.552x+105.833　57(〃)： Y=0.069x+ 98.833
42(〃)： Y=1.900x+104.550　49(〃)： Y=0.417x+104.456
43(〃)： Y=2.201x+101.944　50(〃)： Y=1.008x+100.780

在圖(二)，可以看出第一月平均卵重較輕者，其直線傾斜度較大，而表示增重速度較快，第一月平均卵重次第加重則其直線傾斜度有隨之漸減之趨勢，尤以47克以上之增重速度遽減至爲明顯。同時在該圖可以找出，第一個月平均卵重愈重者，其增減之變化亦愈大，在52克以上者，其平均卵重之增減，有較第一個月爲輕，增重亦頗不齊一。由於以上情形觀之，選擇第一個月之平均重量以其中數較爲適當，過大或過小，均所不宜。

初生卵重之大小與成熟年齡遲早有關，按Jull(1924)報告稱；開始產卵年齡愈早則其開始十個卵之平均重量亦愈輕；同時其產卵總平均亦較輕，據 William. H. Lippincott (1925)稱：開始產卵之年齡，爲第一產卵年卵重季節性之分佈之重要因素。該氏(1921)所得來航初產期愈遲則其初生十個蛋之平均重量與年齡之相關係數爲 +0.7139±0.0293， 本研究所分析之結果其相關係數爲 r = +0.616±0.078至於其第一個月卵重平均與全年卵重之總平均重量之相關係數 r=+0.913±9.079 相關至爲明顯。茲 依初生年齡與卵之增重情形分別列表(三)及製圖(三)， 爲初生年齡計算便利計，以月數爲單位(120－136天爲四個月；136－165天爲五個月，依次類推)，其各別增重直線方程如下：

四個月： Y=2.957x+103.613　八個月： Y=0.365x+102.583
五個月： Y=1.976x+102.989　九個月： Y=0.534x+104.279
六個月： Y=1.796x+101.326　十個月： Y=0.152x+ 99.512
七個月： Y=0.964x+103.984　十一個月： Y=0.019x+ 98.731

初生卵重與年齡關係爲正相關，故在圖(三)所示之情形與第一個月卵重平均大小各別增重情形相似不另多贅。成熟期早爲選擇育種條件之一，過早有卵輕之弊，故選擇應注意早熟且卵重。遲熟期第一個月卵雖重但不合經濟原則在所不宜。

依其開始產卵月份不同之增重情形分別列表繪圖如表(四)及圖(四)，其增重速度以指數計算之直線方程如下：

一 月： Y=1.827x+ 97.708　五 月： Y=1.779x+ 98.020　九 月： Y=0.794x+111.172
二 月： Y=1.973x+ 98.592　六 月： Y=1.710x+105.468　十 月： Y=0.446x+106.351
三 月： Y=1.181x+105.659　七 月： Y=1.599x+105.690　十一月： Y=0.110x+101.548
四 月： Y=2.829x+102.028　八 月： Y=1.667x+107.915　十二月： Y=0.435x+ 99.239

據 D. C. Warren(1933)報告：溫度可影響卵之重量，又按李登元(1948)報告：夏秋兩季之卵重較之春冬兩季之卵重爲輕，來航減輕3.64克或6.393%洛島紅減輕0.946克或 1.72%，名古屋減輕 1.409克或 2.616 %，夏秋兩季卵之所以減輕，因該兩季節之氣溫較春冬兩季者爲高之故也。在表(四)開始第一個月平均卵重，在春冬兩季者較夏秋兩季者爲重，此即開始產卵之季節氣溫之不同而影響卵之輕重也。圖(四)之曲線表示，除一、二兩月份開始產卵，其第一產卵年之增重情形一直向上外，從三月份以後開始產卵者則其增重情形由產卵第十個月起次第提前一個月減輕蛋重之趨勢，尤其以11. 12兩月份開始產卵者第三個月(即當夏季開始之時)以後即行減輕卵重，且有逐漸減輕較初生卵重爲輕之現象，直至暑季過後約八月間才漸向上增重，此爲冬季開始產卵雖較重而受氣候影響亦較顯著所致。在春季產卵之鷄隻除初生卵重影響全年平均卵重亦較重外，同時其增重較爲正常，第一產卵年所受氣溫之影響變化不大。換句話說即秋雛之飼育頗有其價值也。

表(二) 第一個月卵產平均重量別及其逐月增重(克)

開始卵重	隻數	第一月	第二月	第三月	第四月	第五月	第六月
		平均及指數	平均及指數	平均及指數	平均及指數	平均及指數	平均及指數
33	1	33.36 100	36.795 110.296	40.117 120.434	44.000 131.894	41.625 124.775	46.652 139.844
36	2	35.832±0.329 100	38.181±7.487 106.572	43.164±1.701 120.462	42.879±0.879 119.666	43.650 121.818	50.950 142.191
37	3	37.233±0.017 100	42.853±0.218 114.939	43.341±1.209 116.231	45.504±4.754 122.050	51.189±0.368 137.298	50.208±1.008 134.667
38	3	38.261±0.212 100	43.863±0.755 114.641	48.291±0.930 126.214	49.658±0.825 129.552	49.810±1.690 130.184	50.904±1.874 133.044
39	6	38.983±0.235 100	42.427±0.841 108.834	44.777±1.326 114.862	46.443±1.749 119.136	47.381±2.101 121.545	49.047±1.661 125.816
40	8	40.014±0.325 100	43.251±0.582 108.089	44.641±0.466 111.563	44.971±0.999 112.388	46.346±0.685 115.824	48.223±0.880 120.515
41	11	40.958±0.314 100	44.629±0.904 108.962	45.388±0.873 110.815	46.876±1.362 114.448	48.660±1.381 118.804	50.906±1.187 124.288
42	18	42.368±0.124 100	45.671±0.454 107.795	47.139±0.615 111.250	47.745±0.744 112.691	50.103±0.840 118.256	50.854±0.896 120.029
43	8	42.923±0.215 100	45.870±0.746 106.865	45.918±0.792 106.977	47.452±1.286 110.551	49.761±0.809 115.930	50.375±1.334 117.361
44	12	44.130±0.212 100	47.984±0.869 108.733	48.452±0.602 109.793	49.617±0.698 112.433	51.219±1.489 116.063	51.871±1.663 117.541
45	19	45.006±0.142 100	46.843±0.306 104.081	46.501±0.801 103.321	47.476±1.127 105.488	47.911±1.042 106.454	49.272±1.158 109.478
46	11	46.033±0.211 100	46.979±0.516 102.121	47.843±0.655 103.999	49.033±1.079 106.517	49.273±0.909 107.038	49.929±0.823 108.463
47	5	47.059±0.103 100	48.449±0.400 102.953	50.596±0.812 107.516	51.469±2.629 109.371	51.306±2.714 109.024	51.655±2.088 109.766
48	16	48.145±0.114 100	49.906±0.502 103.657	50.606±0.701 105.111	50.891±0.806 105.683	51.383±1.188 106.725	50.486±1.333 104.856
49	11	48.828±0.206 100	49.632±1.682 101.646	50.113±1.628 102.631	51.604±1.077 105.685	51.377±0.951 105.220	52.153±1.291 106.809
50	11	50.109±0.124 100	51.979±1.226 103.731	53.005±0.774 105.779	53.261±0.960 106.290	53.287±1.211 106.342	52.884±1.325 105.537
51	8	50.938±0.015 100	51.684±0.864 101.466	52.905±1.807 103.861	53.492±0.971 105.013	53.859±1.056 105.734	53.198±0.925 104.436
52	7	51.919±0.058 100	51 442±0.669 99.081	53.250±0.808 102.503	53.230±1.491 102.525	54.323±1.452 104.630	53.714±1.605 103.457
53	4	52.832±0.117 100	52.636±0.408 99.629	52.919±0.578 100.164	54.513±1.855 103.181	54.710±1.471 103.546	54.846±1.224 103.812
54	3	53.652±0 210 100	52.448±1.764 97.755	54.536±0.666 101.647	53.078±1.000 98.930	52.721±1.321 98.264	53.037±1.201 98.853
55	2	54.951±0.379 100	60.065±5.595 109.306	56.341±2.351 102.529	56.170±3.572 102.218	54.546±2.273 99.295	55.091±4.532 100.254
56	1	56.131 100	57.800 102,973	60·010 106.910	61.100 108.852	59.355 105.743	60.636 108.025
57	3	56.873±0.128 100	56.034±1.521 98.524	57.382±0.473 100.894	56.494±2.374 99.331	56.005±3.000 98.473	55.303±2.666 97.239
58	2	58.113±0.067 100	57.253±0.310 98.520	57.731±0.016 99.342	59.982±0.418 103.216	59.089±0.242 101.679	59.327±0.141 102.089
59	1	59.200 100	57.629 97.346	58.335 98.538	59.540 100.574	60.5 102.195	60.500 102.195

* 休産

月別 平均及指數 開始卵重	隻數	第七月	第八月	第九月	第十月	第十一月	第十二月	全年卵重總平均
33	1	47.000 140.887	*	51.505 154.391	51.852 155.431	51.742 155.101	52.084 156.127	46.035±2.665
36	2	52.776 147.287	51.407 143.466	50.728 141.571	51.895±0.355 144.828	49.355±0.120 137.340	49.555±0.160 138.298	46.902±2.176
37	3	50.499±1.519 135.447	51.122±2.594 137.118	48.661±1.477 130.517	48.509±2.376 130.110	51.419±1.267 137.915	47.739±1.039 128.044	48.220±2.320
38	3	50.237±2.736 131.300	49.552±3.125 129.518	48.868±4.017 127.722	48.350±4.784 126.368	47.808±1.492 124.952	52.488±0 137.184	48.432±3.322
39	6	49.110±1.851 125.977	49.610±1 964 127.234	49.652±0.979 127.371	50.239±1.356 128.874	51.147±1.196 131.203	52.755±0.872 135.328	46.678±1.625
40	8	48.067±0.948 120.125	48.598±0.846 121.452	51.321±1.560 128.257	50.922±0.893 127.260	51.588±1.172 128.912	51.061±1.693 127.607	46.094±2.645
41	11	52.327±1.016 127.757	53.110±0.966 129.669	53.546±0.974 130.733	53 517±0.579 130.663	53.525±0.615 130.682	52.987±0.670 129.369	49.874±1.094
42	18	50.888±0.884 126.109	51.267±0.663 121.004	51.415±0.927 121.353	52.502±0.826 123.918	52.206±0.913 123.220	53.092±1.108 125.311	49.375±0.588
43	8	51.527±1.824 120.045	52.086±1.129 121.349	51.623±1.431 120.273	53.582±1.003 124.832	54 047±1.265 125.916	53.495±0.974 124.630	48.894±0.789
44	12	52.603±1.430 119.200	53.476±1.397 121.178	54.307±1.032 123.061	54.299±0.912 123.043	54 157±0.679 122.721	53 213±0.750 120.582	51.486±1.014
45	19	50.802±1.492 112.878	50.409±1.645 112.005	50.637±1.376 112.511	52.059±1.033 115.671	52.202±1.987 115.988	52.128±0.840 115.824	48.832±0.680
46	11	50.569±1.170 109.853	52.427±0.942 113.890	54.136±1.159 117.602	52.965±1.426 115.058	52.329±0.719 113.677	54.519±0.756 118.434	50.721±0.714
47	5	50.835±2.089 108.023	50.646±2.011 107.622	50.339±2.286 106.969	51.304±2.969 109.020	50.728±2.926 107.796	50 850±2.121 108.055	50.154±1.318
48	16	51.259±1.023 106.467	50.638±0.494 105.178	51.388±1.087 106.735	51.465±1.111 106.895	51.835±0.995 107.664	52.880±0.906 109.834	50.733±0.696
49	11	51.960±1.406 106.414	52.752±1.232 108.036	51.250±2.063 104.966	56.511±1.998 115.734	55.970±1.789 114.626	54.971±1.271 112.580	52.241±0.776
50	11	53.355±1.504 106.477	54.152±1.181 108.068	53.525±0.977 106.817	54.432±1.268 108.627	57.173±0.428 114.097	58.174±0.644 116.094	53.560±0.789
51	8	53.215±1.271 104.470	53.521±1.000 105.070	54.410±1.400 106.816	56.806±1.121 111.519	57.073±1 370 112.044	58.073±0.927 114.007	53.784±0.868
52	7	55.166±1.281 106.253	54.554±1.586 105.075	54.850±1.040 105.645	55.881±1.189 107.642	55.352±1.214 106.612	56.434±1.306 108.696	54.161±0.737
53	4	53.759±1.201 101.754	53.642±1.418 101.533	55.705±1.479 105.437	54.025±1.080 102.252	49.768±2.729 94.200	54.553±0.325 103.257	53.528±0.408
54	3	50.851±0.520 94.779	51.920±0 236 96.771	53.438±1.855 99.601	52.634±0.610 98.102	53.867±0.267 100.400	54.444±0.874 111.476	52.544±0.332
55	2	57.384±4.666 104.427	58.302±5.447 106.098	52.744±0 95.983	54.100±0 94.451	66.681±0 121.357	67.755±0 123.300	57.192±0.972
56	1	58.227 103.734	55.837 99.476	*	55.500 98.875	*	59.828± 106.586	57,677±
57	3	55.830±2.645 98.166	56.173±1.526 98.769	55.980±1.290 98.429	54.778±1.391 96.316	57.761±3.179 101.561	56.479±2.061 99.307	55.004±1.146
58	2	59.261±0.295 101.975	59.045±1.013 101.603	60.094±0.353 103.408	62.412±0.775 107.397	61.933±3.733 106.593	64.712±1.038 111.358	61.271±1.024
59	1	*	64.842 109.530	64.741 109.359	62.000 104.729	64.008 108.121	62.300 105.236	61.280±0.000

表(三) 開始產卵年齡(月數)之卵重逐月增重(克)

月數	隻數	第一月	第二月	第三月	第四月	第五月	第六月
4	2	38.233±4.872 100	42.022±5.227 109.910	40.177±0 105.084	47.357±3.358 123.864	45.862±5.238 119.953	48.770±2.118 127.559
5	38	42.953±0.755 100	45.341±0.735 105.559	46.233±0.668 107.636	47.543±0.818 110.686	49.731±0.917 115.780	51.072±0 878 118.762
6	60	45.434±0.510 100	47.766±0.572 105.132	48.621±0.506 107.014	49.749±0.578 109.497	50.557±0.469 111.275	51.514±0.491 113.382
7	35	47.270±0.756 100	49.621±0.668 104.973	51.441±0.648 108.823	51.782±0.794 109.545	53.104±1.105 112.341	52.684±0.788 111.453
8	15	49.019±0.724 100	49.713±0.641 101.415	50.673±0.830 103.374	51.219±0.824 104.488	50.486±0 960 102.992	49.708±1.082 101.405
9	3	50.055±3.535 100	51 694±1.775 103.274	51.627±2.767 103.140	55.124±0.882 110.126	56.590±1.462 113.055	55.910±2.013 111.697
10	5	53.063±2.028 100	52.403±1.777 98.756	53.356±1.624 100.540	52.308±2.067 98.577	51.746±2.251 97.518	48.77±81.030 91.924
11	4	54.136±1.108 100	54.177±1.080 100.075	53.884±0.957 99.534	53.120±1.547 98.123	53.145±2.121 98.169	52.049±2.159 96.144

(表頭：月別／平均及指數；月數／隻數)

表(四) 開始產卵月份別及其逐月增重(克)

月份	隻數	第一月	第二月	第三月	第四月	第五月	第六月
1	15	46.965±1.261 100	48.444±1.234 103.149	49.242±1.205 104.848	49.843±1.275 106.127	49.599±1.223 105.608	50.045±1.102 106.558
2	38	45.887±0.692 100	47.688±0.764 103.924	47.655±0.666 103.852	48.372±0.712 105.393	45.400±0.678 105.476	49.252±0.700 107.333
3	8	45.590±0.731 100	45.493±2.427 99.787	46.558±1.919 102.123	47.773±2.327 104.788	48.898±1.810 107.255	51.332±2.014 112.594
4	8	41.479±1.252 100	44.549±1.232 107.401	46.553±1.087 112.231	47.833±1.032 115.318	48.388±1.408 116.656	49.672±0.748 119.752
5	4	47.807±1.314 100	47.810±0.556 100.006	48.717±0.947 101.903	48.259±0.407 100.945	50.754±1.154 106.164	52.319±0.881 109.431
6	8	44.486±2.202 100	47.371±1.995 106.485	47.905±1.826 107.685	50.091±2.823 112.599	53.906±2.409 121.175	53.389±1.174 120.013
7	14	43.641±1.278 100	45.292±0.525 105.173	46.985±0.638 109.105	47.627±1.018 110.595	51.956±0.941 120.648	52.907±0.905 122.856
8	10	44.396±1.946 100	47.229±1.645 106.381	51.026±1.525 114.933	52.289±2.035 117.850	54.736±0.980 123.290	55.318±0.996 124.601
9	17	44.158±1.014 100	48.263±0.868 109.296	50.612±0.904 114.655	52.534±0.767 118.968	54.692±1.104 123.855	54.207±1.012 122.756
10	12	48.808±0.810 100	51.560±0.801 105.638	53.956±0.6861 110.547	54.847±0.736 112.372	55.247±0.891 113.895	53.714±0.970 110.051
11	15	49.760±0.869 100	50.582±0.867 101.651	51.312±0.944 103.118	50.994±1.440 102.479	51.210±0.857 102.913	50.291±1.192 101.067
12	10	50.118±1.412 100	51.262±0.907 102.382	51.916±0.759 103.587	51,000±0.997 101.763	50.609±1.056 100.979	49.331±1.317 98.429

(表頭：月別／平均及指數；月份／隻數)

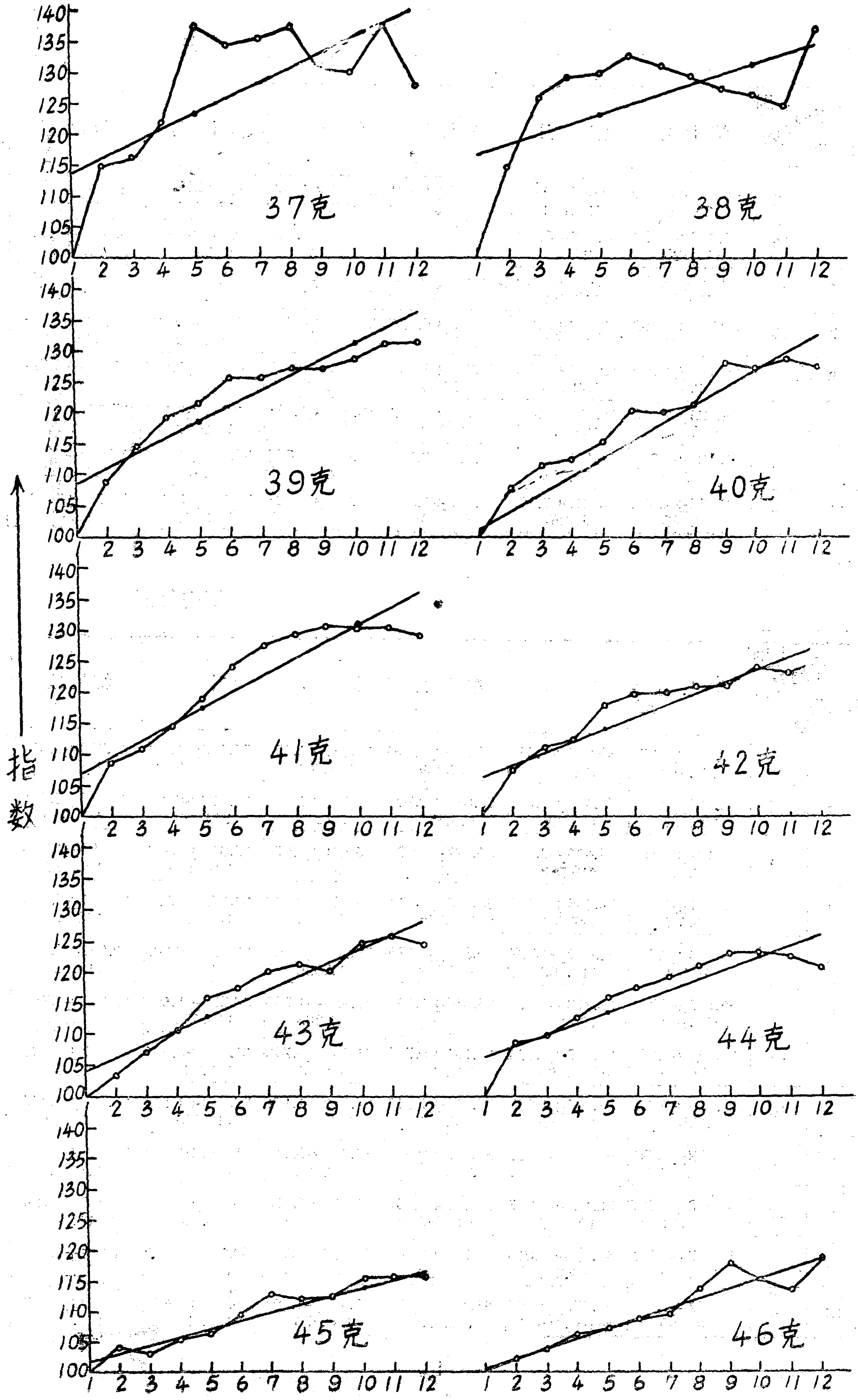
續表(三)

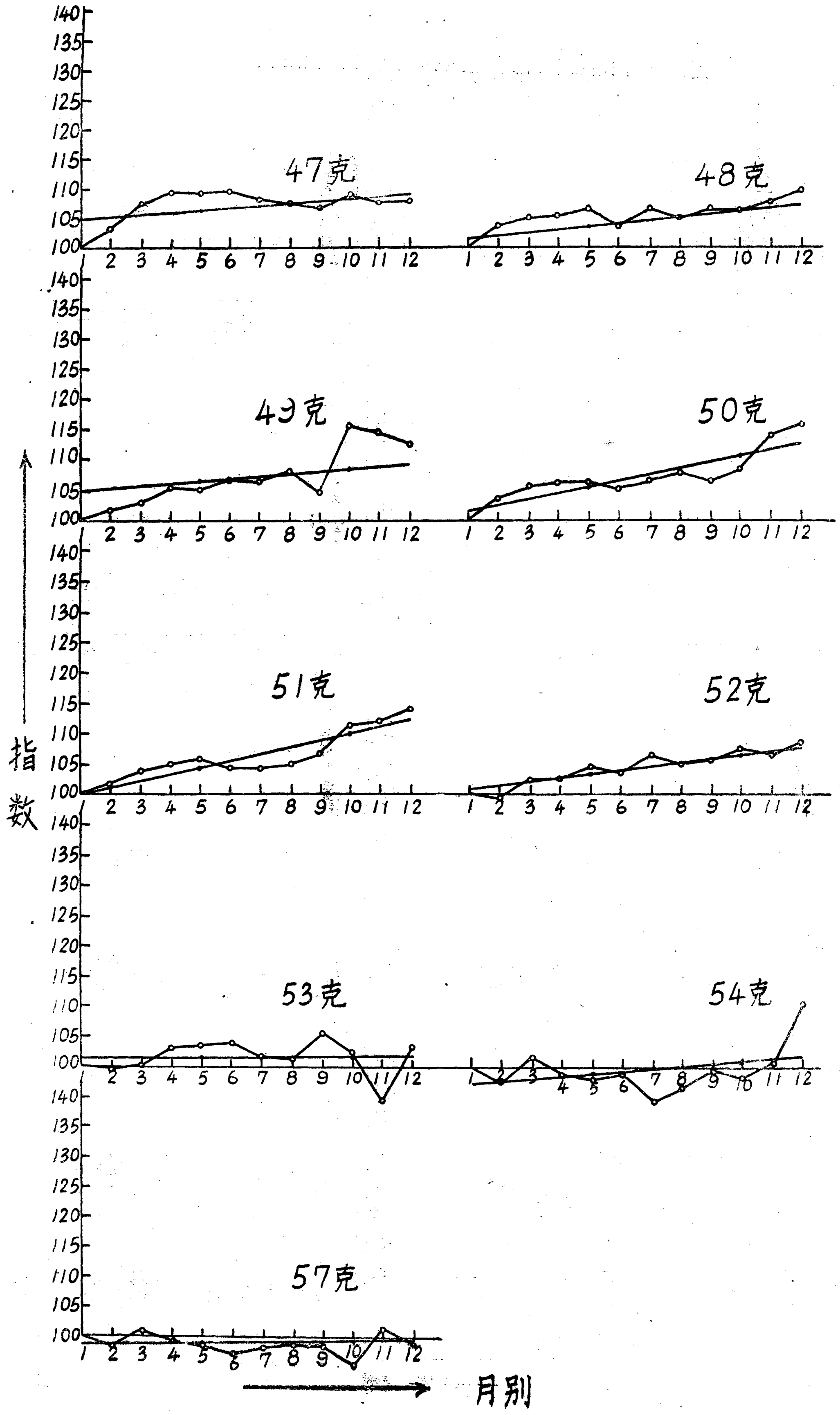
月數＼售數＼平均及指數＼月別		第七月	第八月	第九月	第十月	第十一月	第十二月
4	2	48.537±3.075 126.950	49.008±0 128.182	50.143±1.362 131.151	50.709±1.143 132.631	51.942±0 135.856	50.860±1.221 133.026
5	38	51.298±0.780 119.428	51.913±0.716 120.860	52.376±0.719 121.937	52.884±0.628 123.120	52.530±0.623 122.296	52.845±0.643 123.029
6	60	52.269±0.574 115.043	53.163±0.488 117.911	53.541±0.464 117.843	54.399±0.485 119.731	54.321±0.547 119.560	55.263±0.546 121.633
7	35	52.578±0.783 111.229	52.812±0.676 111.724	52.553±0.776 111.176	53.577±0.848 113.342	53.926±0.734 114.080	54.520±0.755 115.337
8	15	50.156±1.032 102.319	50.168±0.962 102.343	50.033±1.008 102.068	49.866±0.971 101.727	50.412±1.402 102.841	52.880±1.377 101.876
9	3	54.725±2.013 109.329	54.517±1.462 108.914	54.990±1.462 109.859	55.053±1.597 109.985	51.361±5.166 102.609	55.550±1.650 110.977
10	5	52.129±4.308 98.239	51.464±3.310 96.986	52.573±3.130 99.076	54.473±6.388 102.657	58.570±1.677 110.378	58.519±2.088 110.282
11	4	52.752±2.652 97.443	52.126±2.349 96.287	54.577±1.351 100.814	52.819±0.729 97.567	55.503±3.242 102.525	53.275±1.125 98.409

續表(四)

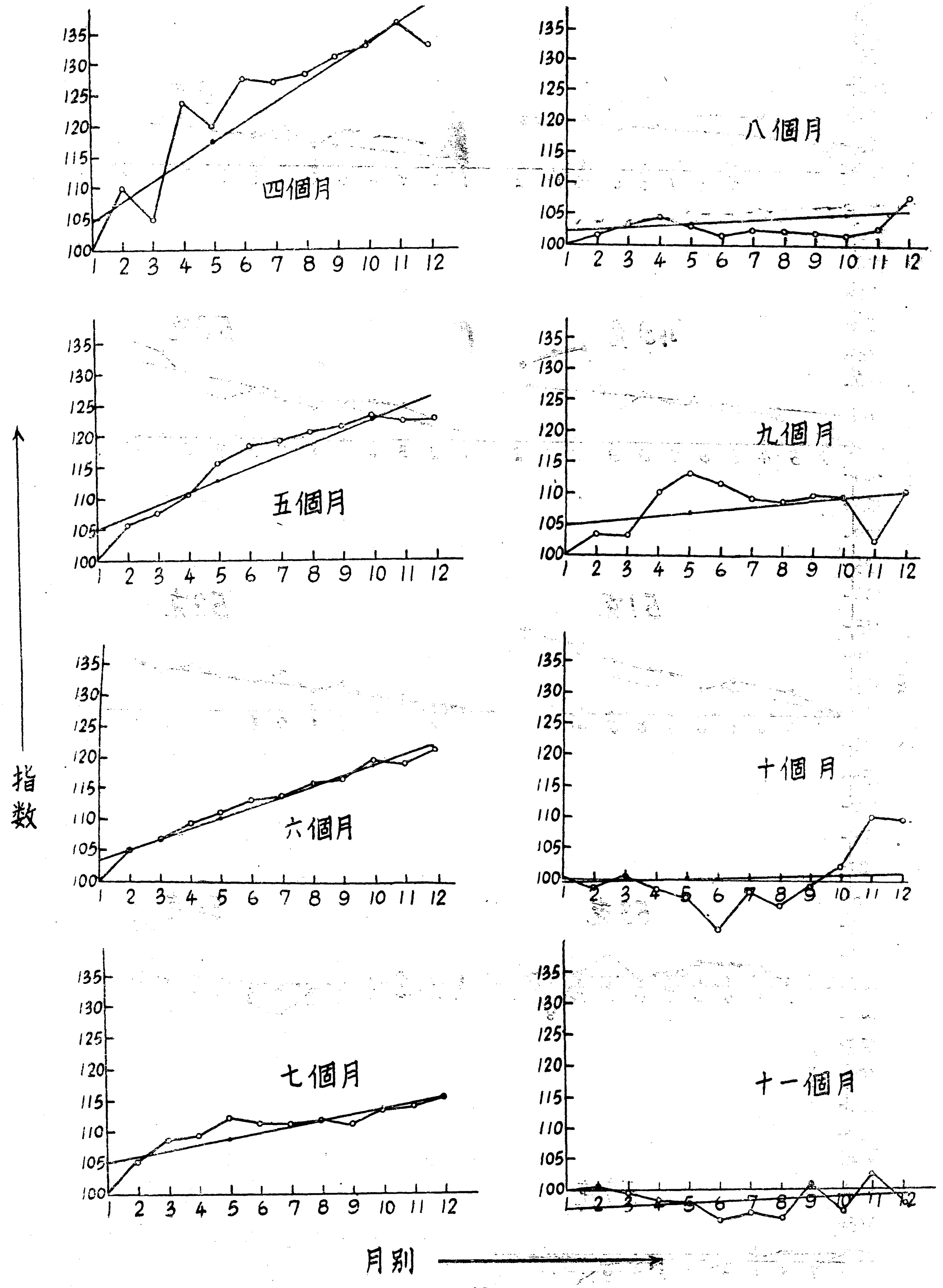
月份＼售數＼平均及指數＼月別		第七月	第八月	第九月	第十月	第十一月	第十二月
1	15	49.980±1.378 106.419	50.966±1.298 108.519	52.746±1.190 112.309	55.889±1.651 119.001	56.613±1.335 120.542	56.700±0.884 120.728
2	38	50.134±0.783 109.257	52.406±0.795 114.206	53.070±0.704 115.653	55.161±1.529 120.210	55.110±0.732 120.099	55.973±0.651 121.980
3	8	54.181±1.600 118.844	54.486±2.056 119.513	56.127±2.000 123.112	56.881±0.978 124.766	56.061±1.711 122.967	55.884±1.558 122.579
4	8	50.051±1.030 120.677	52.845±1.470 127.401	53.398±1.477 128.735	55.645±0.752 134.152	55.177±0.523 133.023	54.094±0.766 130.412
5	4	55.698±0.722 116.505	55.649±1.207 116.403	56.356±0.676 117.882	55.962±0.763 117.058	55.291±0.500 115.564	53.891±0.816 112.726
6	8	55.137±1.711 123.942	55.213±1.719 124.143	54.354±1.996 122.182	53.954±1.750 121.283	53.208±1.684 119.606	53.352±1.780 119.929
7	14	53.098±0.907 123.300	52.617±0.694 122.183	52.151±0.745 121.181	51.643±0.745 119.921	51.858±0.906 120.920	50.857±0.903 118.096
8	10	55.739±0.770 125.549	55.855±1.000 125.810	54.864±1.059 123.578	54.068±1.161 121.785	52.412±1.122 118.066	54.558±1.277 122.889
9	17	53.492±0.928 121.137	52.272±0.955 118.374	51.697±0.992 117.072	52.078±0.411 117.935	51.062±1.488 115.634	51.169±0.771 115.877
10	12	54.622±0.987 111.911	53.136±0.877 108.867	52.607±1.157 107.783	53.932±0.673 110.498	53.845±0.911 110.320	54.213±1,109 111.074
11	15	50.367±0.895 101.219	49.370±1.014 99.216	48.780±1.145 98.030	48.797±0.992 98.064	49.980±1.120 100.442	51.655±1.318 103.808
12	10	49.497±1,212 98.760	50.477±1.156 100.716	51.458±1.379 102.673	50.457±1.087 100.676	54.366±3.844 108.475	53.910±0.727 107.566

圖(二) 第一個月卵之平均重量別及其各月平均增重圖

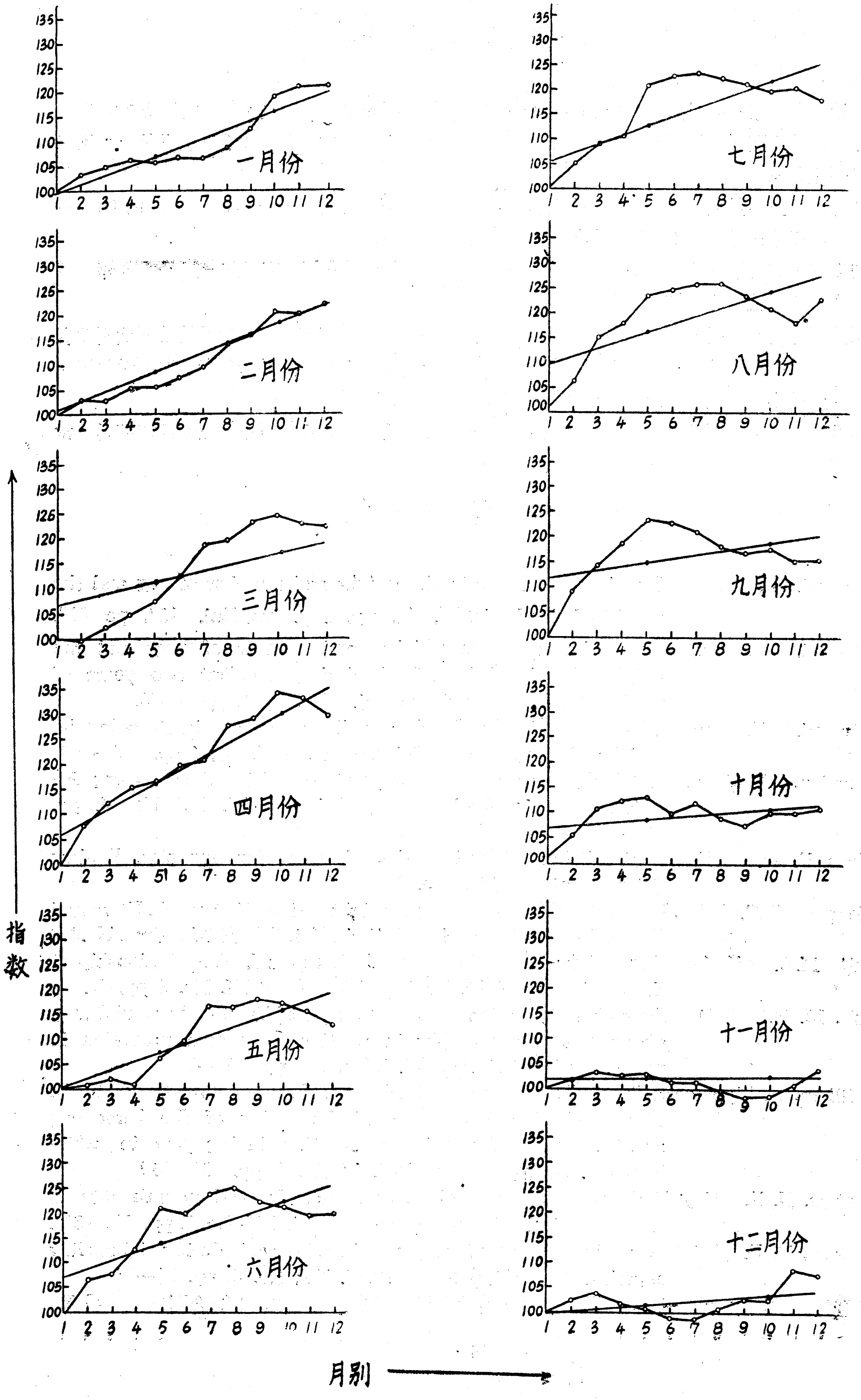



47克
48克
49克
50克
51克
52克
53克
54克
57克
指数
月別

圖(三) 開始產卵年齡(月數)別逐月卵之平均增重圖



圖(四)開始產卵之月份不同逐月卵之平均增重圖



三、結 果 摘 要

1. 開始產卵其第一個月卵重平均較輕者，其第一產卵年期內之增重較快，重者則反是。同時其增重之速度隨(年齡)月數之增加而漸減，第一個月平均卵重愈重者，其增重愈不齊一，且有反輕之現象。
2. 初產卵重與年齡成正比，成熟期愈早則其初產卵亦愈輕。初產第一個月平均卵重與年齡（月數）之相關係數 r＝＋0.616±0.078
3. 初產第一個月平均卵重與全年卵重之相關係數 r＝＋0.913±0.079 表示第一個月平均卵重者，全年卵重總平均亦較重，甚爲明顯。
4. 開始產卵之月份別，因氣溫不同之影響，春、冬兩季之第一個產卵月平均重量較夏秋兩季者爲重，但冬季開始產卵者，至翌年卵重受氣溫之影響較大；春季開始產卵者其卵重受氣溫之影響則較小，故秋雛之飼育頗有其價值。
5. 開始產卵年齡之選擇在5－6個月爲宜，其第一個月平均卵重，似接近中數左右選擇較爲正常。

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STUDIES ON THE INCREASE OF EGG-WEIGHT DURING THE FIRST LAYING YEAR IN W. S. C. LEGHORNS

By

T. Y. Lee

Summary

During the years 1945—1950 all eggs at the poultry farm were weighed daily on the day following production to 0.5 gm. The records of 163 W. S. C. leghorns Were chosen for this study, only, birds that had produced 100 eggs or more during the first laying year were used. The mean number of eggs per bird was 162±2.687, the mean days of first egg laying was 192.583±3.323. The data were placed on a monthly basis. The mean monthly egg size was obtained from the varied age of first laying egg, from the different month the bird beginning laying and from the different egg size of beginning laying, for determing what effect the various factors named have on egg size. The data gives the following results:

1. The smaller the mean of the first month egg size, the greater the rate of increrase egg size in successive laying. But the rate slowly decreased analogous to increase in age.
2. The later laying commences the higher the mean weight of the first month eggs laid. The correlation between the later laying and the first month eggs mean weight is highly significant($r = +0.616 \pm 0.078$)
3. The higher the mean weight of the first month egg laid, the greater the average weight of total egg weight in first laying year. The correlation is highly significa-nt ($r = +0.913 \pm 0.078$)
4. The average egg size of first month of the winter-spring laying commenced is more greater than that of summer-autum laying. It is due to the effect of seasonal weather. But the egg size of winter laying commenced was effected by the warm weather more serious than that of other seasons in which laymg commenced. The hens were laying hatching out at autum should possess of resistance to the warm weather during next. ycar.
5. It is suggested that the seletion of the time of first egg laymg of bird should be about 5 to 6 months of age, and that the egg size should be chosen the mean weight of normal distridution of the first month egg size for breeding stock.